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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,795	08/26/2003	Walter H. Delphin	081904/0305735	2065

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EXAMINER	
THEXTON, MATTHEW	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 10/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/647,795	DELPHIN ET AL.	
	Examiner	Art Unit	
	Matthew A. Thexton	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-10 and 12-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-10 and 12-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Obligation

Applicant is reminded of the continuing obligation under 37 CFR 1.178(b), to timely apprise the Office of any prior or concurrent proceeding in which Patent No. 5880207 is or was involved. These proceedings would include interferences, reissues, reexaminations, and litigation.

Applicant is further reminded of the continuing obligation under 37 CFR 1.56, to timely apprise the Office of any information which is material to patentability of the claims under consideration in this reissue application.

These obligations rest with each individual associated with the filing and prosecution of this application for reissue. See also MPEP §§ 1404, 1442.01 and 1442.04.

Surrender of Original Patent

The original patent, or a statement as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

Status of Claims when Amendment is Submitted

Applicant is advised that the amendment filed 2003 August 26 does not comply with 37 CFR 1.173 (c).

The correct status appears to be: As of date of amendment, 2003 August 26,

Claims 1, 3-10, 12-19 are pending.

Claims 2, 11 have been canceled.

Applicant is required to submit a status page in response to this Office action, even if there is no further amendment.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

These claims require that the particles of the formulation or the thermoformed formulation be of size 250 to 600 microns. The disclosure describes the unformulated particles as having this size (column 4, lines 13-21) and the formulated particles will swell significantly. Since these claims refer to "said particles" which are formulated in claims 1 and 10, for them to have the exact same size as required by the disclosure for unformulated particles is not enabled and would induce undue experimentation to satisfy inconsistent and incompatible requirements.

Claims 9 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

These claims require that the particles of the formulation or the thermoformed formulation be of size 250 to 600 microns. The disclosure describes the unformulated particles as having this size (column 4, lines 13-21) and the formulated particles will swell significantly. Since these claims refer to "said particles" which are formulated in claims 1 and 10, for them to have the exact same size as required by the disclosure for unformulated particles is not described and therefore raises the question whether Applicant was in possession of the concept of particle size in the formulated or thermoformed material being of size 250 to 600 microns.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These claims require that the particles of the formulation or the thermoformed formulation be of size 250 to 600 microns. The disclosure describes the unformulated particles as having this size (column 4, lines 13-21) and the formulated particles will swell significantly. Since these claims refer to "said particles" which are formulated in claims 1 and 10, for them to have the exact same size as required by the disclosure for unformulated particles is confusing.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, 7, 10, 12-14, 16, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Seki et al. (US 5039749 A).

The claims are directed to formulations and thermoforming method of using them which comprises A) a matrix of polymethylmethacrylate and B) particles comprising b1) a copolymer of methylmethacrylate, b2) an ethylenically unsaturated monomer, and b3) a crosslinker.

The reference discloses formulations and thermoforming methods of using them (column 5, line 61 to column 6, line 14, example 1). The formulations comprise matrix polymer of methylmethacrylate (paragraph bridging columns 2-3), and core/shell particles comprising copolymers of methylmethacrylate and methyl acrylate, ethyl acrylate, n-butyl acrylate (column 3, lines 29-32) with a crosslinker such as diallyl compounds, dimethacrylic compounds (column 3, lines 36-42), allyl methacrylate (example 1).

Analysis of example 1 reveals that the particle is composed of 10.6 weight percent of butyl acrylate comonomer and about 0.5 weight percent crosslinkers. Analysis of example 2 reveals slightly higher amounts of crosslinkers.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-8, 10, 12-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deckers et al. (EP 0582951 A2, as evidenced by US 5475055 A).

The claims are directed to formulations and thermoforming method of using them which comprises A) a matrix of polymethylmethacrylate and B) particles comprising b1) a copolymer of methylmethacrylate, b2) an ethylenically unsaturated monomer, and b3) a crosslinker. The specification qualifies A) in that it may contain up to about 5 percent of other monomers (column 2-3).

The reference discloses formulations and thermoforming methods of using them (see examples). The formulations comprise A1 copolymer of A11 and A12 which may be 50 to 95 weight percent methyl methacrylate (column 1, lines 39-42), B 0.5-15 weight percent (column 1, lines 64-65), and C particulate comonomer comprising C1 plus C2 plus C3 (column 2, lines 1-14). The presence of B is not probative since the claims are 'comprising.'

The reference suggests for the comonomer of the C particle comprise C1 at 80-99 weight percent methyl methacrylate and C2 at 0.5 to 15 weight percent "an ester of acrylic acid" (column 2, lines 6-7), and "a fairly long-chain acrylic ester (C2)" (column 3, lines 45-46), and for the crosslinker of the particle "a crosslinking monomer

copolymerizable with C1 and C2" at 0.5 to 5 weight percent (column 2, lines 8-9) which is exemplified as butanediol dimethacrylate (column 4, lines 60-61). The limitations of claims 1, 7, 8, 10, 16, 17, and 19 appear to be suggested by this disclosure.

The reference suggests "a fairly long-chain acrylic ester (C2)" (column 3, lines 45-46) which appears to encompass the butyl acrylate of claims 3, 4, 12, and 13.

The reference suggests for the crosslinker of the particle "a crosslinking monomer copolymerizable with C1 and C2" at 0.5 to 5 weight percent (column 2, lines 8-9) which is exemplified as butanediol dimethacrylate (column 4, lines 60-61), which is a close analog to the ethylene glycol dimethacrylate of claims 5, 6, 14, and 15.

Absent evidence of unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to select other known species for the comonomer and crosslinker given the generic suggestions and to thus arrive at the limitations of the claims.

Claims 1, 3-8, 10, 12-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US 5237004 A).

The claims are directed to formulations and thermoforming method of using them which comprises A) a matrix of polymethylmethacrylate and B) particles comprising b1) a copolymer of methylmethacrylate, b2) an ethylenically unsaturated monomer, and b3) a crosslinker.

The reference discloses formulations and thermoforming methods of using them (see column 11, lines 34-43, and examples such as example 9). The formulations

comprise matrix polymer of methylmethacrylate (column 10, lines 49-51), and single phase polymer particles comprising copolymers of methylmethacrylate, butyl methacrylate, ethyl acrylate, butyl acrylate, styrene (column 4, lines 1-14) which incorporate crosslinking monomers such as glycol dimethacrylates, allyl methacrylate (column 4, lines 48-67) at dosages of about 0.5 to 10 weight percent (column 4, line 67 to column 5, line 3).

The single phase particles are exemplified in examples 122-136, 145, 165-167. None is 75 to 90 weight percent methyl methacrylate plus 10 to 20 weight percent comonomer as required by the claims. Crosslinker allyl methacrylate and butylenes glycol diacrylate are exemplified, but ethylene glycol dimethacrylate as required by claims 6 and 15 are not exemplified. However, given the broad disclosure, absent evidence of unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to select other known species for the particle comonomers and the crosslinker given the generic suggestions and to thus arrive at the limitations of the claims.

Claims 6, 8, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. (US 5039749 A) as applied to claims 1 and 10 above, and further in view of generic suggestions of Seki et al. (US 5039749 A).

The reference discloses formulations and thermoforming methods of using them comprising matrix polymer of methylmethacrylate and particles comprising copolymers of methylmethacrylate with a crosslinker such as dimethacrylic compounds (column 3,

lines 36-42). It would have been obvious to one of ordinary skill in the art at the time of the invention to select known species such as ethylene glycol dimethacrylate given the generic suggestions and to thus arrive at the limitations of the claims.

Analysis of example 1 reveals that the particle is composed of 10.6 weight percent of butyl acrylate comonomer and about 0.5 weight percent crosslinkers. Analysis of example 2 reveals slightly higher amounts of crosslinkers. It would have been obvious to one of ordinary skill in the art at the time of the invention to deviate from the examples slightly to arrive at slightly higher dosages of crosslinker in order to obtain the optical properties which are the object of the reference.

Claims 1, 5-8, 10, 14-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennig et al. (US 4876311).

The claims are directed to formulations and thermoforming method of using them which comprises A) a matrix of polymethylmethacrylate and B) particles comprising b1) a copolymer of methylmethacrylate, b2) an ethylenically unsaturated monomer, and b3) a crosslinker.

The reference discloses formulations and thermoforming methods of using them (see column 1, lines 8-9, column 6, lines 13-17, and example 2). The formulations comprise matrix polymer of methylmethacrylate (column 6, lines 1-7, example 2), and polymer particles comprising copolymers of methylmethacrylate component B (column 4, lines 8-10) and comonomer (column 3, lines 32-66), which incorporate crosslinking monomers such as glycol dimethacrylates (column 4, lines 12-27) at dosages of about

0.1 to 20 weight percent (abstract and claim 1). Example 1 to the particle employs 59 weight percent of MMA, 40 weight percent styrene, 1 weight percent glycol dimethacrylate. Example 2 to the formulation employs polymethyl methacrylate plus the particles of example 1.

Absent evidence of unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to select other known species for the comonomer and proportions within the suggested range given the generic suggestions and to thus arrive at the limitations of the claims.

Claims 1, 3-10, 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roemer et al. (US 4396476).

The claims are directed to formulations and thermoforming method of using them which comprises A) a matrix of polymethylmethacrylate and B) particles comprising b1) a copolymer of methylmethacrylate, b2) an ethylenically unsaturated monomer, and b3) a crosslinker.

The reference discloses formulations and thermoforming methods of using them (see column 12, lines 11-30, examples). The formulations comprise matrix polymer of methylmethacrylate (column 9, lines 42-43), and polymer particles comprising copolymers of methylmethacrylate (column 5, line 57 to column 6, line 39, examples) and comonomer (op. cit.), of size 0.001-500 microns (column 9, lines 10-29), which incorporate crosslinking monomers such as ethylene glycol dimethacrylate (column 6, line 40 to column 7, line 68, especially column 7, lines 24-25 and 66-67) at dosages of

about 0.1 to 30 weight percent (column 8, lines 13-58). The proportions of comonomer to methylmethacrylate in the particle phase are suggested in the examples and range from 0.2 (example 6) to 10 (example 4) to 30 (example 3). No single example anticipates the claims.

Absent evidence of unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to select from the comonomers and proportions within the suggested range given the generic suggestions and to thus arrive at the limitations of the claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 571-272-1125. The examiner can normally be reached on Monday-Friday, 9:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M A Thexton

Matthew A. Thexton
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Art Unit 1714